

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/040,621
Attorney Docket No.: Q67687

AMENDMENTS TO THE DRAWINGS

Figure 5 is amended to provide a more descriptive label.

Attachment: One (1) Replacement Sheet

REMARKS

Claims 1-35 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 17, 31, and 33.

I. Preliminary Matter

As a preliminary matter, the Examiner has initialed the references listed on Form PTO/SB/08 A & B submitted with the Information Disclosure Statement filed on February 2, 2005.

II. Summary of the Office Action

Claims 1-12, 14-18, 23, and 24 presently stand rejected under 35 U.S.C. § 103 and claims 13, 19-22, and 25-35 contain allowable subject matter. The Examiner also objected to the specification and the drawings for minor informalities.

III. Objection to the Drawings

The Examiner objected to the drawings for lack of descriptive label for the axis (*see* page 4 of the Office Action). Applicant respectfully requests the Examiner to withdraw this objection to the drawings in view of the self-explanatory amendment to Fig. 5.

IV. Objection to the Specification

The Examiner has objected to the Specification because of minor informalities. In particular, the Examiner alleges that the changes to the specification made in the Amendment under 37 C.F.R. § 1.111 filed on February 22, 2005 are unreadable. Applicant again amends the specification to clearly show the changes being made. Applicant respectfully requests the Examiner to withdraw the objections in view of these self-explanatory amendments.

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If the changes are still unreadable, Applicant respectfully requests the Examiner to contact Applicant's representatives.

V. Claim Rejection under 35 U.S.C. § 112, second paragraph

Claim 33 is rejected under 35 U.S.C. § 112, second paragraph. Applicant respectfully requests the Examiner to withdraw this rejection of claim 33 in view of a self-explanatory claim amendment being made herein.

VI. Prior Art Rejections

The Examiner withdrew some of the previous grounds for rejection. The Examiner, however, found new grounds for rejecting claims 1-12, 14-18, 23, and 24. Specifically, the prior art rejections are as follows:

a) claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,463,432 to Murakawa (hereinafter "Murakawa") in view of U.S. Patent No. 6,411,953 to Ganapathy et al. (hereinafter "Ganapathy"),

b) claims 3, 4, 18, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakawa and Ganapathy in view of U.S. Patent No. 6,519,360 to Tanaka (hereinafter "Tanaka") and U.S. Patent No. 6,693,962 to Murching et al. (hereinafter "Murching"),

c) claims 5 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakawa, Ganapathy, Tanaka, and Murching in view of Deng et al.: "Peer Group Filtering and Perceptual Color Image Quantization," *Proc. 1999 IEEE International Symposium on Circuits and Systems*, Vol. 4, May 30-June 2, 1999, pp. 21-24 (hereinafter "Deng - PGF"),

d) claims 7-9 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakawa, Ganapathy, Tanaka, Murching, and Deng - PGF in view of Deng et al.: "Color Image Segmentation," *1999 IEEE Conf. ON Computer Vision and Pattern Recognition*, Vol. 2, June 23-25, 1999, pp. 446-451 (hereinafter "Deng - CIS"),

e) claims 10, 11, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakawa, Ganapathy, Tanaka, and Murching in view of U.S. Patent No. 6,801,657 to Cieplinski (hereinafter "Cieplinski"), and

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f) claims 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakawa, Ganapathy, Tanaka, and Murching in view of Ma et al.: "Texture Features and Learning Similarity," *Proc. 1996 IEEE Conf. on Computer Vision and Pattern Recognition*, June 18020, 1996, pp. 425-430 (hereinafter "Ma").

Applicant respectfully traverses these rejections in view of the following comments.

The Examiner contends that the combined teachings of Murakawa and Ganapathy suggests each feature of independent claims 1 and 2. This rejection is not supportable for at least the following reasons.

Claim 1 recites, in part, "by combining one or more weighted color distances and one or more weighted texture distances by considering human visual perception attributes, wherein the one or more weighted color distances and the one or more weighted texture distances are obtained by applying predetermined weighting factor to each texture distance and to each color distance." Independent claim 2 recites, in part, "calculating a feature distance between the query image and each data image by combining the weighted color distances and the weighted texture distances by applying a second set of differing weighing factors that reflect human visual perception attributes."

The Examiner acknowledges that Murakawa does not teach or suggest the above-quoted features of claim 1. The Examiner, however, contends that Ganapathy cures the deficient teachings of Murakawa. In particular, the Examiner alleges that col. 16, lines 2 to 26 disclose combining distance measures using weighting factors that match human perception (*see* page 7 of the Office Action) and further alleges that these distance measures *could be* color and texture distances. This rejection is technically inaccurate for at least the following reasons.

In Ganapathy, the comparisons are performed separately for color information and for texture information. Ganapathy discloses using luminance and chrominance components for extracting color-based information and then using achromatic pattern component for the extraction of purely texture-based information (col. 8, lines 6 to 18). The color distance measures between one or more images is compared (col. 13, lines 12 to 26 and col. 17, lines 1 to 40).

With respect to the texture-based information, Ganapathy discloses that the texture information may be a weighted sum of two terms (col. 16, lines 5 to 27). However, these terms (uniformity, regularity, repetitiveness) are unrelated to the color information. Instead, these two terms only relate to texture (col. 58 to 64). In fact, Ganapathy discloses that the achromatic pattern map model (for the generation of texture information) is “completely unrelated to color” (col. 13, lines 55 to 65).

Moreover, as is visible from the similarity measurements of Ganapathy, the color and texture distances are not combined, see RULES 1-4, which consider the color and texture distances separately (col. 17, lines 7 to 44). Accordingly, the combined distances of Ganapathy cannot be color and texture distances at least because it would contradict the teachings of Ganapathy.

Furthermore, Ganapathy does not teach or suggest applying a set of differing weighting factor that reflect human visual perception attributes. With respect to the weighting factors, Ganapathy only teaches that the distance function is the weighted sum of the two terms. The weighting factors are designed such that the results should match the human perception (col. 16,

lines 19 to 26). However, in Ganapathy, the weighting factors themselves do not reflect the human visual perception attributes. That is, in Ganapathy, there is no teaching or suggestion that the weights reflect the human visual perception attributes. In short, Ganapathy fails to cure the deficient teachings of Murakawa.

Therefore, “by combining one or more weighted color distances and one or more weighted texture distances by considering human visual perception attributes, wherein the one or more weighted color distances and the one or more weighted texture distances are obtained by applying predetermined weighting factor to each texture distance and to each color distance,” as set forth in claim 1 and “calculating a feature distance between the query image and each data image by combining the weighted color distances and the weighted texture distances by applying a second set of differing weighing factors that reflect human visual perception attributes,” as set forth in claim 2 are not taught or suggested by the combined teachings of Murakawa and Ganapathy, which lack combining weighted color and texture distances by applying a second set of different weights that reflect human perception attributes.

Together, the combined teachings of Murakawa and Ganapathy would not have and could not have led an artisan of ordinary skill in the art to achieve the subject matter of independent claims 1 and 2. Therefore, for all the above reasons, independent claims 1 and 2 are patentable over the combined teachings of Murakawa and Ganapathy. Accordingly, it is appropriate and necessary for the Examiner to withdraw this rejection of claims 1 and 2.

With respect to the dependent claims 3-12, 14-18, 23 and 24, they are rejected as being unpatentable over Murakawa and Ganapathy in view of secondary references, *i.e.*, Tanaka,

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Murching, Deng - PGF, Deng - CIS, Cieplinski, and Ma. These secondary references do not compensate for the above-identified deficiencies of Murakawa and Ganapathy. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 2. Since claims 3-12, 14-18, 23, and 24 dependent on claim 2, they are patentable at least by virtue of their dependency.

VII. Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 13, 19-22, and 25-35 contain allowable subject matter. Applicant respectfully holds the rewriting of the objected claims in abeyance until arguments presented with respect to the independent claims 1 and 2 have been reconsidered.

VIII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

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Respectfully submitted,



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